Enterprise Management Suite User Guide for VCX™ V7000 Components

VCX™ V7000 IP Telephony Solution
System Release 6.0

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About This Guide

This chapter contains an overview of this guide, lists guide conventions, related documentation, and product compatibility, and describes how to contact Customer Service.

This guide describes how to configure and maintain the following:

- 3Com Accounting Server
- 3Com Application Downloader
- 3Com Authentication Server
- 3Com Directory Server
- 3Com SIP Call Processor
- 3Com SNMP Agent
- 3Com VCX Data Server
- IP Messaging System
- UNIX OS Entity

This guide is intended for operators and administrators of the system and assumes you have a thorough understanding of telecommunications, VoIP technology, Linux operating system, Oracle databases, network knowledge, and system administrator privileges.

Release notes are issued with some products. If the information in the release notes differs from the information in this guide, follow the instructions in the release notes.

Table 1 and Table 2 list conventions that are used throughout this guide.

Table 1 Notice Icons

Icon	Notice Type	Description
	Information note	Information that describes important features or instructions
	Caution	Information that alerts you to potential loss of data or potential damage to an application, system, or device
	Warning	Information that alerts you to potential personal injury

Table 2 Text Conventions

Convention	Description
`Screen displays`	This typeface represents information as it appears on the screen.
`Syntax`	The word "syntax" means that you must evaluate the syntax provided and then supply the appropriate values for the placeholders that appear in angle brackets. Example: To enable RIPIP, use the following syntax: `SETDefault !<port> -RIPIP CONTrol = Listen` In this example, you must supply a port number for <port>.
`Commands`	The word "command" means that you must enter the command exactly as shown and then press Return or Enter. Commands appear in bold. Example: To remove the IP address, enter the following command: **`SETDefault !0 -IP NETaddr = 0.0.0.0`**
The words "enter" and "type"	When you see the word "enter" in this guide, you must type something, and then press Return or Enter. Do not press Return or Enter when an instruction simply says "type."
Words in *italics*	Italics are used to: ■ Emphasize a point. ■ Denote a new term at the place where it is defined in the text. ■ Identify menu names, menu commands, and software button names. Examples: From the *Help* menu, select *Contents*. Click *OK*.

Related Documentation

These 3Com documents contain additional information about the products in this release that are a part of or support the the 3Com Convergence Applications Suite.

The following documents are a part of the VCX IP Telephony Module:

- *VCX Installation and Maintenance Guide*
- *VCX Administration Guide*
- *VCX Business Telephone Quick Reference Guide*
- *VCX Basic Telephone Quick Reference Guide*
- *VCX Telephone Guide*
- *VCX Security Guide*

The following documents are a part of the IP Messaging Module:

- *IP Messaging Suite Product Overview*
- *IP Messaging - 3Com Native Interface AT - A - GLANCE*
- *IP Messaging Suite User Guide - 3Com Native Interface*
- *IP Messaging - Traditional Interface AT - A - GLANCE*
- *IP Messaging Suite User Guide - Traditional Interface*
- *IP Messaging Suite Operations and System Administration Guide*
- *3Com E-Mail Reader Application ReadMe*
- *IP Messaging Intelligent Mirroring Guide*

The following documents are a part of the IP Conferencing Module:

- *IP Conferencing Module Administration Guide*
- *IP Conferencing User Module Guide*
- *Convergence Center Client User and Administration Guide*

The following documents provide information on products that support this release:

- *Enterprise Management Suite Getting Started Guide, Version 2.1*
- *Enterprise Management Suite User Guide, Version 2.1*
- *VCX V7111 Fast Track Installation Guide, Version 4.4*
- *VCX V7111 SIP Gateway User Manual, Version 4.4*

- *VCX V7122 SIP VoIP Gateway Installation Guide, Version 4.4*
- *VCX V7122 VoIP SIP Gateway User Manual, Version 4.4*
- *V6000 Branch Office Gateway Fast Track Installation Guide, Version 4.4*
- *V6000 Branch Office Gateway User Manual, Version 4.4*

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Please include the following information with your comments:

- Document title
- Document part number (found on the front page)
- Page number
- Your name and organization (optional)

Example:

Enterprise Management Suite User Guide for VCX™ V7000 Components
Part Number 900-0180-01 Rev AA
Page 25

Please address all questions regarding the 3Com software to your authorized 3Com representative.

1 3Com VCX IP Telephony Server

This chapter describes how to configure the features that are associated with the VCX IP Telephony Server.

Saving the 3Com VCX IP Telephony Server Configuration in EMS

The 3Com VCX IP Telephony Server configuration can be saved to a CFM file. After saving the configuration, the CFM file can be set as a baseline so it can be used for restoring. A backup produces a (binary) CFM file containing a snapshot of the system configurables (basically, any object that is SNMP manageable on all components). This does not include databases, user profiles, voice mail backup, etc. It is basically just the system configuration available via SNMP.

To save the 3Com VCX IP Telephony Server configuration in EMS:

1. From the *Explorer* tab, right-click *3Com VCX IP Telephony Server*.
2. From the pop-up menu, select *Configuration* and then select *Backup*.

The progress is shown in the *Job Progress* section of the EMS GUI. When the save is finished, the *Working* icon changes to a *Finished* icon.

The default directory for .CFM files is: ...3Com\EMS\backups. The file name is saved as follows: <component IP address>_YYYYMMDDHHMMSS.cfm. For example, 192.168.120.110_20051029185959.cfm.

Restoring the 3Com VCX IP Telephony Server Configuration in EMS

The 3Com VCX IP Telephony Server configuration can be restored from a saved CFM file. The CFM file restores any SNMP manageable system configurables. It automatically chooses the correct CFM file to restore to the same server the backup was taken from. A backup cannot be applied from one server to another.

To restore the 3Com VCX IP Telephony Server configuration in EMS:

1 From the *Explorer* tab, right-click *3Com VCX IP Telephony Server*.

2 From the pop-up menu, select *Configuration* and then select *Restore Current*.

The progress is shown in the *Job Progress* section of the EMS GUI. When the restoration is finished, the *Working* icon changes to a *Finished* icon.

Creating Backup Configuration Files

Enterprise Management Suite allows you to save the configurations for the IP Telephony Server and IP Messaging server and create CFM backup configuration files. Use configuration file manager (CFM) backup configuration files to restore the IP Telephony Server and IP Messaging Server to a previous set of configurations.

CFM files store data in a defined format that can be altered.

Creating a CFM Backup File

You can save the Linux Server configuration to a CFM file. After you have saved the configuration, you can set the CFM file as a baseline so that you can restore it later.

To save the Linux Server configuration:

1 From the *Explorer* tab, right-click the *3Com VCX IP Telephony Server*.

2 From the pop-up menu, select *Configuration* and then select *Backup*.

A dialog box appears and displays the progress of the save. When the save is finished, the *Working* icon changes to a *Finished* icon.

3 Click *Close*.

This file becomes the current, or most recently saved or restored, version. You can set the current version as the baseline version.

Setting the Current Configuration as Baseline

To set the current, or most recently saved or restored, configuration as the baseline version:

1 From the *Explorer* tab, right-click the *3Com VCX IP Telephony Server*.

2 From the pop-up menu, select *Configuration* and then select *Set baseline to current*.

A dialog box appears and displays the progress of the command. When the command has completed, the *Working* icon changes to a *Finished* icon.

3 Click *Close*.

This file becomes the baseline version.

To restore the Linux Server configuration, refer to Restoring Backup Configuration Files.

Restoring Backup Configuration Files

You can restore the 3Com VCX IP Telephony Server configuration from the last backup (current), the baseline, or the planned CFM file.

To restore the 3Com VCX IP Telephony Server configuration:

1 From the *Explorer* tab, right-click the *3Com VCX IP Telephony Server*.

2 Select the configuration file you want to restore (baseline, current, or planned).

3 From the pop-up menu, select *Configuration* and then select one of the following:

- **a** To restore the configuration to the last saved configuration, select *Restore current*.
- **b** To restore the configuration to the saved baseline configuration (refer to Setting the Current Configuration as Baseline), select *Restore baseline*.
- **c** To restore the configuration to the planned configuration, first select the CFM file (refer to Selecting the Planned CFM File), and then select *Restore planned*.

A dialog box appears and displays the progress of the restore command. When the configuration is restored, the *Working* icon changes to a *Finished* icon.

4 Click *Close*.

Selecting the Planned CFM File

After you save the accounting server configuration to a CFM file, select the configuration file as the planned configuration. The planned configuration is not restored until you execute the *CFM Restore Planned* command. Refer to Restoring Backup Configuration Files.

To select the planned CFM file:

1. From the *Explorer* tab, select the *3Com VCX IP Telephony Server*.
2. From the *Properties* tab, select the *Configuration* tab.
3. Double-click the *Planned* drop-down list and select the desired CFM file.
4. Click *Save all*.

Golden Template Configuration

Configuring Golden Templates is a feature that is not specific to just VCX components. For more information on Golden Template configuration, see the *Enterprise Management Suite User Guide*.

Verifying State of the VCX IP Telephony Server

Use the *State* tab to view basic statistics for the VCX IP Telephony Server.

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com VCX IP Telephony Server*.
3. From the *Properties* tab, click *State*.
4. For a description of each field, see Table 3.

Table 3 IP Telephony Serber State Tab

Attribute	Description	Settings
Operational State	Indicates the current operational state.	Read-only
Reserved	Indicates if the object is reserved by another user.	Read-only
Reserved by	Indicates who has reserved the object.	Read-only
Usage State	Indicates how busy the resource is. `Active` is displayed when working properly.	Read-only

Verifying VCX IP Telephony Server Software Version

To verify what the operating system version is:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com VCX IP Telephony Server.*
3. From the *Properties* tab, click *Identification*.
4. In the *Version* field, the O/S version is listed.

VCX IP Telephony Server Identification Tab

Use the *Identification* tab to view basic statistics for the operating system such as the software version.

Identification Tab Location

To view the *Identification* tab:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com VCX IP Telephony Server.*
3. From the *Properties* tab, click *Identification.*
4. For a description of each field, see Table 4.

Table 4 IP Messaging Identification Tab

Attribute	Description	Settings
Class	The internal schema className for this object.	Read-only
FQN	The fully qualified name of this object. This is the complete path from the root of all objects.	Read-only
Location	Identified the phycial location of the server.	String
Serial Number	Serial Number of the server. This field is reserved for future use.	Read-only
Site Type	Identifies what type of office this server is. 1 – unknown 2 – regional 3 – branch 4 – standalone	Read-only

(continued)

Table 4 IP Messaging Identification Tab

Attribute	Description	Settings
System Type	Identifies the server type based on the components that are installed and running on this server, which affect the features made available by the server. ■ `allComponents` – both the IP Telephony and IP Messaging servers are installed ■ `callServer` – only the VCX Call Processor is installed ■ `dataServer` – only the VCX Data Server is installed ■ `ipMessagingServer` – only the IP Messaging server is installed ■ `Softswitch` – only the IP Telephony server is installed ■ `billingSupportServer` – only the billing support server is installed ■ `undetermined` – cannot determine server tye	Read-only
User Label	A label assign by the user.	String
Vendor	The vendor name of this software.	Read-only
Version	The current version of this software.	Read-only

Verifying the Type of Office Configured

To determine if the server is a regional or branch office:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com VCX IP Telephony Server*.
3. From the *Properties* tab, click *Identification.*
4. From the *Site Type* field, the office type is listed such as `regional` or `branch`.

Verifying the Type of Components Installed on a Server

To determine the type of components installed on a server:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com VCX IP Telephony Server*.

3 From the *Properties* tab, click *Identification.*

4 From the *System Type* field, the type of server is listed, which is used to determine what components are installed. See the *Installation and Maintenance Guide* for an overview of what components are available with each configuration listed.

Verifying the Amount of Disk Spaced Used on an IP Telephony Server

This option is useful for monitoring how much space is left on a server for log files, back-ups, and any processes that require disk space. You can even configure traps to warn you of when disk space is becoming limited so you know to purge old files and increase space availability.

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com VCX IP Telephony Server.*

3 From the *Properties* tab, click *Memory.*

4 From the *Memory Utilization (%)* field, the percentage the total amount of space used is listed. If the server has reached 100, there is no more space left on this server.

Configuring Date and Time Variables for the IP Telephony Server

This section provides information on how to configure the timezone, time, and date for an IP Telephony Server. This option can sometimes be used in place of the **`vcx-config-network --wizard`** script.

In a VCX system the daylight savings and timezone configuration should only be modified using the **`vcx-config-network -- wizard`** tool that is located on the VCX server. Even though it appears the timezone and daylight savings time can be modified using Enterprise Management Suite (EMS), all configurations are not currently supported since you cannot change the daylight savings status (enabled to disabled or vice versa) from the original configuration. Also, not as many timezone options are available in EMS as there are through the **`vcx-config-network -- wizard`** tool.

When using the **`vcx-config-network -- wizard`** tool, both the Daylight Savings and Timezone preference are configured at the same time.

Configuring the Date of an IP Telephony Server

To modify the configured date of an IP Telephony Server:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com VCX IP Telephony Server*.
3. From the *Properties* tab, click *Time.*
4. From the *Date* field, enter the new date in the **`DD:MM:YYYY`** format.
5. Click *Save All*.

Configuring the Time of an IP Telephony Server

To modify the configured time of an IP Telephony Server:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com VCX IP Telephony Server*.
3. From the *Properties* tab, click *Time.*
4. From the *Time* field, enter the new time in the **`HH:MM:SS`** format. You must use military time (24 hour format).
5. Click *Save All*.

Configuring the Timezome of an IP Telephony Server

To modify the configured timezome of an IP Telephony Server:

Using the **`vcx-config-network -- wizard`** *tool is actually preferred if possible since both the Daylight Savings and Timezone preference are configured at the same time.*

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com VCX IP Telephony Server*.
3. From the *Properties* tab, click *Time.*
4. From the *Timezone* field, double-click the field and choose a new timezone from the drop-down menu.
5. Click *Save All*.

Configuring Authorization Station Agents

In order for this feature to become available (activated), during installation and initial configuration of the VCX IP Telephony System, IP addresses needed to be entered when prompted for the IP Address of the Authorized Management Stations. If at least one IP address is entered then this feature becomes active and only that machine can manage the server. If no IP addresses for authorized stations are configured at initial installation, then the feature is not enabled (not activated).

The *Authorized Stations* table lists which IP addresses the common agent accepts SNMP request from. Requests originating from other sources are dropped. This is a security feature on the common agent.

Adding Authorized Station Agents

Authorized station agents can only be added if an authorized station station agent was added when the IP Telephony Server was initially configured. Up to four authorized station agents can be configured.

To add authorized station agents:

1. From the explorer tree in EMS, click on the IP Telephony Server you want to add authorized station agents to.
2. From the right-hand pane, click the *Authorized Stations* tab.
3. Click *Add*.

   The *Add row to table* window appears.
4. From the *IP* field, enter the IP address of the server you want to be allowed as an authorized station agent.
5. From the *NetMask* field, enter the subnet mask IP address of the server.
6. Click *OK*.

   The authorized agent is added to the table.

Deleting Authorized Station Agents

To delete an authorized station agents:

1. From the explorer tree in EMS, click on the IP Telephony Server you want to delete an authorized station agents from.
2. From the right-hand pane, click the *Authorized Stations* tab.
3. Click the row containing the IP address you want to delete.
4. Click *Delete*.

The authorized agent is deleted from the table.

Enabling and Disabling the Web Provisioning Server (Tomcat)

Through EMS you can enable and disable the web provisioning server (Tomcat). When disabled, the administrator cannot access the VCX data server configurables through the web provisioning server.

To enable or disable the web provisioning server GUI:

1. From the EMS explorer tree, navigate to the *3Com VCX IP Telephony Server*.
2. Right-click and select *Web Provisioning* and then click one of the following depending on whether you need to enable or disable the web provisioning server:
   - Enable – click *Enable Web Provisioning*.
   - Disable – click *Disable Web Provisioning*.

Rediscovering the IP Telephony Server in EMS

After making configuration changes on any of the VCX components, rediscover the 3Com VCX IP Telephony Server to refresh the configuration MIB values.

To rediscover to 3Com VCX IP Telephony Server in EMS:

1. In the explorer tree, right-click the *3Com VCX IP Telephony Server*.
2. From the pop-up menu, click *Rediscover*.

The progress is shown in the *Job Progress* section of the EMS GUI. When the command has completed, the *Working* icon (it is yellow) changes to a *Finished* icon (it becomes green).

Back-end Server Maintenance

This section provides maintenance tasks that are specific to the XML accounting and VCX data servers.

Monitoring XML Accounting Server Activity on the XML Accounting Server

The *Monitor State* command opens the *Monitor State* window. Use this window to monitor the operational state, usage state, or administration state of the accounting server.

To monitor the activity of the XML accounting server:

1. In the explorer tree, right-click the 3*COM XML accounting server*.
2. From the pop-up menu, click *Monitor State*.

Refer to the Enterprise Management Suite User Guide for more information.

Rediscovering the XML Accounting Server

After making configuration changes on the accounting server, rediscover the 3Com VCX IP Telephony Server to refresh the configuration MIB values.

To rediscover to 3Com VCX IP Telephony Server:

1. In the explorer tree, right-click the *3Com VCX IP Telephony Server*.
2. From the pop-up menu, click *Rediscover*.

   The progress is shown in the *Job Progress* section of the EMS GUI. When the command has completed, the *Working* icon (it is yellow) changes to a *Finished* icon (it becomes green).

Restarting Systems and Services

After performing routine maintenance on either the XML accounting and the VCX data servers must be restarted.

To restart the back-end server systems and services:

1. From the explorer tree, click the individual component.
2. Right-click and select *Maintenance*, and then click *Hard Restart*.

Reserving and Unreserving the Back-end Server

The *Operator Reserve* command reserves either the XML accounting or the VCX data servers so that no one else can perform operations on the server except the adminstrator. The *Operator Unreserve* command cancels the reservation.

Reserving Back-end Servers

To reserve the back-end server using EMS:

1. In the explorer tree, right-click the individual back-end server.
2. From the pop-up menu, click *Operator Reserve* to reserve the back-end server.

*If the back-end server is reserved, check the **State** tab to see who has reserved the card.*

Unreserving Back-end Servers

To unreserve either the XML accounting or the VCX data servers:

1. In the explorer tree, right-click the back-end server.
2. From the pop-up menu, click *Operator Un-reserve* to unreserve the back-end server.

Updating the Server State

Use the *State* command to update EMS with the current operational state, usage state, or administration state of the back-end server.

To update the state of either the XML accounting or the VCX data servers:

1. In the explorer tree, right-click the back-end server.
2. From the pop-up menu, select *State* and then click *Update*.

Configuring Replication for the VCX Data Server

This section provides instructions on how to setup replication, check replication, delete replication errors, and drop replication for the VCX IP Telephony Server data server.

Setting Up Replication for a VCX Data Server

This section provides instructions on how to setup replication for a VCX data server. This will only setup replication in one direction. You need to repeat these steps for each set of VCX data servers you want to replication between.

1. From the EMS client explorer tree, for the VCX data server you want to connect to another VCX data server from, click *3Com VCX IP Telephony Server*.
2. In the right-hand pane, click the *Replication Settings* tab.

3 From the *Master Def Site IP Address* field, enter the IP Address of the master definition site (usually the region 1 primary VCX data server).

4 From the *Master Site IP Address* field, enter the IP Address of the master site (usually the region 2 primary VCX data server).

5 From the *Site ID* field, enter the site ID of the Region 1 VCX data server.

6 Click *Save All*.

7 Right-click *3Com VCX IP Telephony Server*, select *Database Replication,* and then click *Setup Database Replication.*

8 Repeat step 1 through step 7 to setup replication from the other direction.

Dropping Replication for a VCX Data Server

This section provides instructions on how to drop replication for a VCX data server. This will only drop replication in one direction. You need to repeat these steps for each set of VCX data servers you want to drop replication between.

1 From the EMS client explorer tree, for the VCX data server you want to drop replication from, click *3Com VCX IP Telephony Server*.

2 Right-click *3Com VCX IP Telephony Server*, select *Database Replication,* and then click *Drop Database Replication.*

Repeat step 1 through step 2 for any other direction you need to drop replication for.

Checking Replication Status on a VCX Data Server

This feature is useful if you want to verify that replication is set-up correctly or if you want to determine if replication has finished setup when the *setupReplication* command is issued.

1 From the EMS client explorer tree, for the VCX data server you want to drop replication from, click *3Com VCX IP Telephony Server*.

2 Right-click *3Com VCX IP Telephony Server*, select *Database Replication,* and then click *Check Database Replication.*

.The *Job Progress* section of the EMS client indicates the Replication state.

Deleting Replication Errors on the VCX Data Server

This section provides details on how to use the VCX replication error deletion script. Replication errors occassionally need to be deleted, for instance, before you perform an upgrade.

1. From the EMS client explorer tree, for the VCX data server you want to drop replication from, click *3Com VCX IP Telephony Server*.
2. Right-click *3Com VCX IP Telephony Server*, select *Database Replication,* and then click *Clear Replication Errors.*

2 Configuring the VCX Data Server

VCX Data Server Database Configuration

Use EMS to edit basic information for database identification.

Changing the VCX Data Server Database Name

Change the database name for the VCX data server using EMS:

1. From the *Explorer* tab, select the VCX data server.
2. From the *Properties* tab, select the *Database Configuration* tab.
3. In the *Name* column, double-click the associated field and enter the new database name.
4. Click *Save all*.

Changing the VCX Data Server Database Server Name

Change the database server name for the VCX data server using EMS:

1. From the *Explorer* tab, select the accounting server.
2. From the *Properties* tab, select the *Database Configuration* tab.
3. In the *ServerName* column, double-click the associated field and enter the new database server name.

   For example, cwbes.
4. Click *Save all*.

Changing the VCX Data Server Database User Name

Change the database user name for the VCX data server using EMS:

1. From the *Explorer* tab, select the VCX data server.
2. From the *Properties* tab, select the *Database Configuration* tab.
3. In the *UserName* column, double-click the associated field and enter the new database user name.

   For example, sys.
4. Click *Save all*.

Changing the VCX Data Server Database User Password

Change the database user password for the VCX data server using EMS:

1. From the *Explorer* tab, select the VCX data server.
2. From the *Properties* tab, select the *Database Configuration* tab.
3. In the *UserPasswd* column, double-click the associated field and enter the new database user password.

   For example, *besgroup*.
4. Click *Save all*.

Configuring the VCX Data Server Database Keep Alive Timeout

Configure the database keep alive timeout setting for the VCX data server using EMS:

1. From the *Explorer* tab, select the VCX data server.
2. From the *Properties* tab, select the *Database Configuration* tab.
3. In the *KeepAlive* column, double-click the associated field and enter the new keep alive timeout.

   The default setting is 20000. The range is 20000 through 1000000.
4. Click *Save all*.

Configuring the VCX Data Server Client Activity Interval

Configure the client activity interval for the VCX data server using EMS:

1. From the *Explorer* tab, select the VCX data server.
2. From the *Properties* tab, select the *BES Common Configuration* tab.
3. Double-click the *ClientActivityInterval* field and enter the client activity interval in milliseconds.

   The default setting is 200000. The range is 2000 through 200000.
4. Click *Save all*.

Configuring VCX Data Server Client Request Threads

Configure client request threads for the for the VCX data server using EMS:

1. From the *Explorer* tab, select the VCX data server.
2. From the *Properties* tab, select the *BES Common Configuration* tab.
3. Double-click the *ClientReqThreads* field and enter the client request threads.

   The range is 4 through 20.
4. Click *Save all*.

Configuring the VCX Data Server Logging Level

Configure the logging level for the VCX data server using EMS:

1. From the *Explorer* tab, select the VCX data server.
2. From the *Properties* tab, select the *BES Common Configuration* tab.
3. Double-click the *LogLevel* field and enter the logging level.

   The default setting is 0. The range is 1 through 255.
4. Click *Save all*.

Enabling VCX Data Server Packet Tracing

Server packet tracing is enabled by default.

Enable packet tracing for VCX data server using EMS:

1. From the *Explorer* tab, select the VCX data server.
2. From the *Properties* tab, select the *BES Common Configuration* tab.
3. Double-click the *PacketTracing* field and select *enable* from the drop-down list.
4. Click *Save all*.

VCX Data Server Configuration Tab Descriptions

Enterprise Management Suite (EMS) contains several common configuration tabs. Most of these configurables must be set to their initial, default configuration.

Tab Location

These tabs are available for the VCX data server.

To access these tabs:

1. From the EMS GUI, navigate to the *3Com VCX IP Telephony Server* within the *Equipment* folder.
2. Click *3COM VCX Data Server*.
3. From the left-hand of the GUI, select the *Properties* tab (default).

3 Q Protocol Configuration

Use the *3 Q Protocol Configuration* tab to enable the proprietary 3Q protocol for the VCX data server.

Table 5 3 Q Protocol Configuration Tab

Attribute	Description	Settings
3QenablesStatus	Whether or not 3Q Protocol is enabled.	Read-only
ClientThread	Number of threads to receive data	Integer Range: 1- 4
ControlIPAddress	IP address of the Linux workstation receiving Control Messages.	Read-only
ControlPort	Control port number. Default = 1784.	Read-only
DataIPaddress	IP address of the Linux workstation receiving data.	Read-only
DataPort	Data port number. Default = 1789	Read-only

BES Common Configuration

Use the *BES Common Configuration* tab to enable packet tracing for the VCX data server.

Table 6 BES Common Configuration Tab

Attribute	Description	Settings
ClientActivityInterval	Keep alive interval in milliseconds. Default = 200000	Integer Range: 2000 - 200000
ClientReqThreads	Number of Application thread to process data	Integer Range: 4 - 20
InstallationType	Indicates if this back-end server is part of a regional office (rocsa) or branch office (losca).	Read-only
LogLevel	The logging level that is supported by the Back End Server. Default = 0	Integer Range: 0 - 255
PacketTracing	Enable or disable packet tracing	default = enable disable
UseTrustedClientList	Whether the use of trusted endpoint list is enabled or disabled.	default = enable disable

BES Common Statistics

Use the *BES Common Statistics* tab to view common statistics for the VCX data server.

Table 7 BES Common Statistics Tab

Attribute	Description	Settings
ServerUpTime	Server Up Time	Read-only
TotalDuplicateRequests	Total Duplicate Request	Read-only
TotalIncommingrequests	Total Incoming Request	Read-only
TotalInvalidRequests	Total Invalid Request	Read-only
TotalMalformedRequests	Total Malformed Requests	Read-only
TotalNumOfResponses	Total Number of Responses	Read-only
TotalPacketeDropped	Total Packets Dropped	Read-only
TotalPendingRequests	Total Pending Requests	Read-only
TotalUnknownTypes	Total Unknown Types	Read-only

Flow Control Configuration

Use the *Flow Control Configuration* tab to view basic statistics for the VCX data server.

Table 8 State Tab

Attribute	Description	Settings
Active Status	Indicates the current operational state.	enable disable
MaxCount	Max number of messages that can be queued or processed at any instant. A value of zero will disable Flow Control.	Integer Range: 0 - 150
MaxQueueFullTime	Max time in seconds that the queue will remain full. A value of zero will disable Flow Control.	Integer Range: 0 - 60

Identification

Use the ***Identification*** tab to view basic statistics for the VCX data server.

Table 9 Identification Tab

Attribute	Description	Settings
Alias	A management defined alias for the entity saved across reboots.	String
Class	The internal schema className for this object.	Read-only
FQN	The fully qualified name of this object. This is the complete path from the root of all objects.	Read-only
Last State Change	The value of sysUpTime at the time the entity entered its current operational state.	Read-only
User Label	A label assign by the user.	String
Vendor	The vendor name of this software.	Read-only
Version	The current version of this software.	Read-only

State

Use the ***State*** tab to view basic statistics for the VCX data server.

Table 10 State Tab

Attribute	Description	Settings
Operational State	Indicates the current operational state.	Read-only
Reserved	Indicates if the object is reserved by another user.	Read-only

(continued)

Table 10 State Tab (continued)

Attribute	Description	Settings
Reserved by	Indicates who has reserved the object.	Read-only
Software status	The current operational state of the entity. If AdminStatus is down, then OperStatus should be down. If AdminStatus is changed to up, through the entity command interface, then OperStatus should change to up if the entity is operational; it should remain in the down state if and only if there is a fault that prevents it from going to the up state; it should remain in the notPresent state if the entity has missing components. If the entity is operational, but not responding to queries, the state is notResponding.	Read-only Default = up
Usage State	Indicates how busy the resource is.	Read-only

VCX Data Server Maintenance

This section provides maintenance tasks that are specific to just the VCX data server.

Restarting the VCX Data Server

To restart the VCX data server:

1. From the EMS explorer tree, navigate to the *3Com VCX Data Server*.
2. Right-click the VCX data server and select *Maintenance* and then click *Hard Restart*.

Shutting Down the VCX Data Server

To shut down the VCX data server:

1. From the EMS explorer tree, navigate to the *3Com VCX Data Server*.
2. Right-click the VCX data server and select *Maintenance* and then click *Hard Shutdown*.

Verifying the VCX Data Server State

To verify the state of the VCX data server using EMS:

1. Login to EMS.
2. Navigate to the VCX data server.
3. The state icon light that appears next to the *3COM VCX Data Server* identifies these states:
   - green — it is running
   - yellow – transitioning to another state
   - red — it is down

3 Configuring the XML Accounting Server

Configuring the Client Activity Interval

Configure the client activity interval for the accounting server using either the server configuration file (acctconfig.xml) or Enterprise Management Suite.

To configure the client activity interval for the accounting server using EMS:

1. From the *Explorer* tab, select the accounting server.
2. From the *Properties* tab, select the *BES Common Configuration* tab.
3. Double-click the *ClientActivityInterval* field and enter the client activity interval in milliseconds.

   The default setting is 20000. The range is 2000 through 200000.
4. Click *Save all*.

Configuring Client Request Threads

To configure client request threads for the accounting server using EMS:

1. From the *Explorer* tab, select the accounting server.
2. From the *Properties* tab, select the *BES Common Configuration* tab.
3. Double-click the *ClientReqThreads* field and enter the client request threads.

   The range is 4 through 20.
4. Click *Save all*.

Configuring the Logging Level

To configure the logging level for the accounting server using EMS:

1. From the *Explorer* tab, select the accounting server.
2. From the *Properties* tab, select the *BES Common Configuration* tab.
3. Double-click the *LogLevel* field and enter the logging level.

   The default setting is 0. The range is 1 through 255.
4. Click *Save all*.

XML CDR Configuration

This section provides details on how you can set-up the accounting server for CDR collection.

XML CDR Control

Use the *XML CDR Configuration* tab to set CDR collection variables for the accounting server.

Table 11 XML CDR Configuration Tab

Attribute	Description	Settings
CdrAutoCleanLatestBad	Whether or not the CDR files are removed automatically, periodically if the file is corrupt or missing.	enable default = disable
CdrAutoCleanLatestBadPeriod	Number of 30 minute periods to wait before automatically removing finished CDR files if the latest file is missing or invalid. NOTE: Requires *cdrAutoCleanIfLatestBad* to be enabled.	1 through 65535 default = 96
CdrAutoCleanLatestStale	Whether or not the CDR files are removed automatically, periodically if the latest file is unchanged in a specified period.	enable default = disable

(continued)

Table 11 XML CDR Configuration Tab

Attribute	Description	Settings
CdrAutoCleanLatestStalePeriod	Number of 30 minute periods to wait before automatically removing finished CDR files if the latest file is not changed within a specified period. NOTE: Requires *cdrAutoCleanIfLatestStale* to be enabled.	1 through 65535 default = 96
CdrBaseName	Name of CDR files assigned.	String
CdrDelimiter	Not Used	N/A
CdrFilePath	Path to where the XML based CDR files are put relative to the server install directory root.	String
CdrFileType	Not Used	N/A
CdrNameTimeStamp	Not Used	N/A
CdrRecordsPerFile	The maximum number of CDRs per file.	1 through 65535 default = 500
CdrTimeToClose	The maximum time a CDR file stays open after it has at least one CDR record in it.	1 through 65535 default = 120

Enabling Packet Tracing

To enable packet tracing for the accounting server using EMS:

1. From the *Explorer* tab, select the accounting server.
2. From the *Properties* tab, select the *BES Common Configuration* tab.
3. Double-click the *PacketTracing* field and select *enable* from the drop-down list.
4. Click *Save all*.

XML Accounting Server Configuration Tab Descriptions

Enterprise Management Suite (EMS) contains several common configuration tabs. Most of these configurables must be set to their initial, default configuration.

Tab Location

These tabs are available for the accounting server.

To access these tabs:

1. From the EMS GUI, navigate to the *3Com VCX IP Telephony Server* within the *Equipment* folder.
2. Click on either the *XML Accounting Server* tab.
3. From the left-hand of the GUI, select the *Properties* tab (default).

3 Q Protocol Configuration

Use the *3 Q Protocol Configuration* tab to enable the proprietary 3Q protocol for the accounting server.

Table 12 3 Q Protocol Configuration Tab

Attribute	Description	Settings
3QenablesStatus	Whether or not 3Q Protocol is enabled.	Read-only default = enabled
ClientThread	Number of threads to receive data	Integer Range: 1- 4 default = 2
ControlIPAddress	IP address of the Linux workstation receiving Control Messages.	Read-only
ControlPort	Control port number.	Read-only default = 1781
DataIPaddress	IP address of the Linux workstation receiving data.	Read-only
DataPort	Data port number. DEFAULT = 1788	Read-only default = 1786

BES Common Configuration

Use the *BES Common Configuration* tab to enable packet tracing for the accounting server.

Table 13 BES Common Configuration Tab

Attribute	Description	Settings
ClientActivityInterval	Keep alive interval in milliseconds. Default = 200000	Integer Range: 2000 - 200000
ClientReqThreads	Number of Application thread to process data	Integer Range: 4 - 20 default = 4
InstallationType	Indicates if this back-end server is part of a regional office (rocsa) or branch office (losca).	Read-only
LogLevel	The logging level that is supported by the Back End Server. Default = 0	Integer Range: 0 - 255
PacketTracing	Enable or disable packet tracing	enable default = disable
UseTrustedClientList	Whether the use of trusted endpoint list is enabled or disabled.	enable default = disable

BES Common Statistics

Use the *BES Common Statistics* tab to view common statistics for the accounting server.

Table 14 BES Common Statistics Tab

Attribute	Description	Settings
ServerUpTime	Server Up Time	Read-only
TotalDuplicateRequests	Total Duplicate Request	Read-only
TotalIncommingrequests	Total Incoming Request	Read-only
TotalInvalidRequests	Total Invalid Request	Read-only
TotalMalformedRequests	Total Malformed Requests	Read-only
TotalNumOfResponses	Total Number of Responses	Read-only
TotalPacketeDropped	Total Packets Dropped	Read-only
TotalPendingRequests	Total Pending Requests	Read-only
TotalUnknownTypes	Total Unknown Types	Read-only

Flow Control Configuration

Use the *Flow Control Configuration* tab to view basic statistics for the accounting server.

Table 15 State Tab

Attribute	Description	Settings
Active Status	Indicates the current operational state.	enable disable
MaxCount	Max number of messages that can be queued or processed at any instant. A value of zero will disable Flow Control.	Integer Range: 0 - 150
MaxQueueFullTime	Max time in seconds that the queue will remain full. A value of zero will disable Flow Control.	Integer Range: 0 - 60

Identification

Use the *Identification* tab to view basic statistics for the accounting server.

Table 16 Identification Tab

Attribute	Description	Settings
Alias	A management defined alias for the entity saved across reboots.	String
Class	The internal schema className for this object.	Read-only
FQN	The fully qualified name of this object. This is the complete path from the root of all objects.	Read-only
Last State Change	The value of sysUpTime at the time the entity entered its current operational state.	Read-only
User Label	A label assign by the user.	String
Vendor	The vendor name of this software.	Read-only
Version	The current version of this software.	Read-only

State

Use the *State* tab to view basic statistics for the accounting server.

Table 17 State Tab

Attribute	Description	Settings
Operational State	Indicates the current operational state.	Read-only
Reserved	Indicates if the object is reserved by another user.	Read-only
Reserved by	Indicates who has reserved the object.	Read-only
Software status	The current operational state of the entity. If AdminStatus is down, then OperStatus should be down. If AdminStatus is changed to up, through the entity command interface, then OperStatus should change to up if the entity is operational; it should remain in the down state if and only if there is a fault that prevents it from going to the up state; it should remain in the notPresent state if the entity has missing components. If the entity is operational, but not responding to queries, the state is notResponding.	Read-only
Usage State	Indicates how busy the resource is.	Read-only

Accounting Server Maintenance

This section provides maintenance tasks that are specific to just the accounting server.

Restarting the Accounting Server

To restart the accounting server:

1. From the EMS explorer tree, navigate to the *3Com XML Accounting Server*.
2. Right-click the accounting server and select *Maintenance* and then click *Hard Restart*.

Stopping the Accounting Server

To stop the accounting server:

1. From the EMS explorer tree, navigate to the *3Com XML Accounting Server*.
2. Right-click the accounting server and select *Maintenance* and then click *Hard Shutdown*.

Verifying the Accounting Server State

To verify the state of the accounting server using EMS:

1. Login to EMS.
2. Navigate to the accounting server.
3. The status indicator light that appears next to the *3COM XML Accounting Server* identifies these states:
   - green — it is running
   - red — it is down

4 CONFIGURING THE CALL PROCESSOR

Configuring Call Control

This section provides information on how to configure the Call Control Plugin (CcCfg).

To configure the Call Control Plugin using EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *Configuration*.
4. Double-click any of the fields under the *3COM Sip Call Processor* column and configure according to the descriptions within Table 18.

Table 18 EMS Call Controller Call Control Configurable Descriptions

Attribute	Description	Range	Default
AnonymousCallerString	This configurable determines what value the Call Processor will expect in the from field of an incoming SIP INVITE to indicate that the caller is supressing their caller Id. This is one of the ways in which the Call Processor determines that an incoming caller id is suppressed.	any string	anonymous
AuthDomainString	This configurable determines what value the Call Processor will send in the "domain" parameter of the authentication challenge to SIP Endpoints.	any string	3Com
AuthRealmString	This configurable determines what value the Call Processor will send in the "realm" parameter of the authentication challenge to SIP Endpoints.	any string	3Com
ChallengeAllCalls	This configurable tells the Call Processor to challenge all incoming new call INVITE requests for authentication. In installations where security is a high priority, this configurable should be set to "true".	true false	false

(continued)

Table 18 EMS Call Controller Call Control Configurable Descriptions

Attribute	Description	Range	Default
RingTimeout	This configurable provides a value for default ring no answer treatment for all calls. For any given call, if the called party is not a user on the system (or is a user on the system with no ring no answer timeout value provisioned), the Call Processor will use this value to determine how long to wait for a call to connect after receiving a ringback indication. If the amount of time configured here elapses without the call being answered, the Call Processor will disconnect the calling party and cancel the call to the called party.	60 through 3600 (seconds)	300
SignallingAddress	This configurable tells the Call Processor what IP interface to listen on for SIP messaging. The Call Processor uses this address to send SIP requests and responses.	dotted IP string NOTE: maximum 15 characters	0.0.0.0 NOTE: must be configured
SignallingPort	This configurable tells the Call Processor what IP port to listen on for SIP messaging. The Call Processor will also use this port to send SIP requests and responses.	0 through 65535	5060

5 Click *Save All*.

Configuring Trusted Endpoints

This section provides information on how to add, edit, and delete trusted endpoints for a Call Processor. Trusted endpoint do not need to have a port specified. An IP address, if present in the trusted endpoint list, is trusted independently of the port. A trusted end point can be used for devices such as gateways or other servers within the network.

Adding Trusted Endpoints

To add a trusted endpoint to a Call Processor using EMS:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Trusted Endpoints*.

4 Click *Add*.

The *Add row to table* window appears.

5 From the *Index* field, specify the index of the trusted endpoint. An index is the trusted endpoint table's key and is a unique identifier of a row.

6 From the *IpAddress* field, enter an IP address that you want to make a trusted endpoint.

7 To specify a range of trusted endpoints use the *Netmask* field, otherwise, leave it blank. From the *Netmask* field, enter an IP address for a range of trusted endpoints.

8 Click *OK*.

9 The IP Address is added and is listed in the *IpAddress* column of EMS.

Editing Trusted Endpoints

To edit a trusted endpoint to a Call Processor using EMS:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Trusted Endpoints*.

4 Double-click the field (s) you want to edit under the *IpAddress* column.

5 High-light what you want to edit.

6 Type in the new information.

7 Click in a different field to activate the *Save all* button.

8 Click *Save all*.

The new information is added and is listed in the *IpAddress* column of EMS.

Deleting Trusted Endpoints

To delete a trusted endpoint to the Call Processor using EMS:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Trusted Endpoints*.

4 From the *IpAddress* column, click the IP Address field you want to delete.

5 Click *Delete*.

The trusted endpoint is removed from the call processor.

Verifying Call Processor Version

To verify what the Call Processor version is using EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *Identification*.
4. From the *Version* field, the Call Processor version is listed.

Call Processor Identification Tab

Use the *Identification* tab to view basic statistics for the Call Processor server.

Table 19 Identification Tab

Attribute	Description	Settings
Alias	A management defined alias for the entity saved across reboots.	String
Class	The internal schema className for this object.	Read-only
FQN	The fully qualified name of this object. This is the complete path from the root of all objects.	Read-only
Last State Change	The value of sysUpTime at the time the entity entered its current operational state.	Read-only
User Label	A label assign by the user.	String
Vendor	The vendor name of this software.	Read-only
Version	The current version of this software.	Read-only

Configuring the Back-end Servers

This section provides information on how to add and delete accounting servers, authentication servers, directory servers, and VCX data servers.

In VCX 6.0, the authentication and directory servers were combined to become the VCX data server.

Adding Accounting Servers

To add an accounting server through EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *Accounting Servers*.
4. Click *Add*.

   The *Add row to table* window appears.
5. Fill in the fields according to the descriptions in Table 20.

Table 20 Accounting Server Tab Descriptions in EMS

Attribute	Description	Values
Priority	Specifies the priority of the accounting server.	Integer: 1 - 5 1 = primary) 2 = secondary
AcctServerIpAddress	Specifies the IP Address of the accounting server.	IP Address String xxx.xxx.xxx.xxx (0 - 255)
LocalIpAddress	Specifies the Local IP Address for the accounting server client.	IP Address String xxx.xxx.xxx.xxx (0 - 255)

6. Click *OK*.
7. The accounting server is added to the *Accounting Server* tab.

Editing Accounting Server IP Addresses

To edit an accounting server IP address for the Call Processor using EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *Accounting Servers*.
4. Double-click the IP Address under the *AcctServerIpAddress* column you want to edit.

5 High-light what you want to edit.

6 Type in the new IP address.

7 Click in a different field to activate the *Save all* button.

8 Click *Save all*.

The new IP Address is added and is listed in the *AcctServerIpAddress* column of EMS.

Removing Accounting Servers

To remove an accounting server through EMS:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Accounting Servers*.

4 Put cursor in the row of the accounting server you want to delete.

5 Click *Delete*.

The accounting server is removed from the VCX IP Telephony Server.

Adding Authentication Servers

To add an authentication server through EMS:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Authentication Servers*.

4 Click *Add*.

The *Add row to table* window appears.

5 Fill in the fields according to the descriptions in Table 20.

Table 21 Authentication Server Tab Descriptions in EMS

Attribute	Description	Values
Priority	Specifies the priority of the authentication server.	Integer: 1 - 5 1 = primary) 2 = secondary
AuthServerIpAddress	Specifies the IP Address of the authentication server.	IP Address String xxx.xxx.xxx.xxx (0 - 255)

(continued)

Table 21 Authentication Server Tab Descriptions in EMS

Attribute	Description	Values
LocalIpAddress	Specifies the Local IP Address for the authentication server client.	IP Address String xxx.xxx.xxx.xxx (0 - 255)

6 Click *OK*.

The authentication server is added to the *Authentication Server* tab.

Editing Authentication Server IP Addresses

To edit an authentication server IP address for the Call Processor using EMS:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Authentication Servers*.

4 Double-click the IP Address under the *AuthServerIpAddress* column you want to edit.

5 High-light what you want to edit.

6 Type in the new IP address.

7 Click in a different field to activate the *Save all* button.

8 Click *Save all*.

The new IP Address is added to the nmdb.xml file and is listed in the *AuthServerIpAddress* column of EMS.

Removing Authentication Servers

To remove an authentication server through EMS:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Authentication Servers*.

4 Put cursor in the row of the authentication server you want to delete.

5 Click *Delete*.

The authentication server is removed from the VCX IP Telephony Server.

Adding Directory Servers

To add an directory server through EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *Directory Servers*.
4. Click *Add*.

   The *Add row to table* window appears.
5. Fill in the fields according to the descriptions in Table 22.

Table 22 Directory Server Tab Descriptions in EMS

Attribute	Description	Values
Priority	Specifies the priority of the directory server.	Integer: 1 - 5 1 = primary) 2 = secondary
DirServerIpAddress	Specifies the IP Address of the directory server.	IP Address String xxx.xxx.xxx.xxx (0 - 255)
LocalIpAddress	Specifies the Local IP Address for the directory server client.	IP Address String xxx.xxx.xxx.xxx (0 - 255)

6. Click *OK*.
7. The directory server is added to the *Directory Server* tab.

Editing Directory Server IP Addresses

To edit a directory server IP address for the Call Processor using EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *Directory Servers*.
4. Double-click the IP Address under the *DirServerIpAddress* column you want to edit.
5. High-light what you want to edit.
6. Type in the new IP address.
7. Click in a different field to activate the *Save all* button.
8. Click *Save all*.

   The new IP Address is added to the nmdb.xml file and is listed in the *DirServerIpAddress* column of EMS.

Removing Directory Servers

To remove an directory server through EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *Directory Servers*.
4. Put cursor in the row of the directory server you want to delete.
5. Click *Delete*.

   The directory server is removed from the VCX IP Telephony Server.

Adding VCX Data Servers

To add a VCX data server through EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *Data Servers*.
4. Click *Add*.

   The *Add row to table* window appears.
5. Fill in the fields according to the descriptions in Table 20.

Table 23 VCX Data Server Tab Descriptions in EMS

Attribute	Description	Values
Priority	Specifies the priority of the VCX data server.	Integer: 1 - 5 1 = primary) 2 = secondary
DataServerIpAddress	Specifies the IP Address of the VCX data server.	IP Address String xxx.xxx.xxx.xxx (0 - 255)
LocalIpAddress	Specifies the Local IP Address for the VCX data server client.	IP Address String xxx.xxx.xxx.xxx (0 - 255)

6. Click *OK*.
7. The VCX data server is added to the *Data Servers* tab.

Editing VCX Data Server IP Addresses

To edit a VCX data server IP address for the Call Processor using EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Data Servers*.

4 Double-click the IP Address under the *DataServerIpAddress* column you want to edit.

5 High-light what you want to edit.

6 Type in the new IP address.

7 Click in a different field to activate the *Save all* button.

8 Click *Save all*.

The new IP Address is added and is listed in the *DataServerIpAddress* column of EMS.

Removing VCX Data Servers

To remove a VCX data server through EMS:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Data Servers*.

4 Put cursor in the row of the VCX data server you want to delete.

5 Click *Delete*.

The VCX data server is removed from the VCX IP Telephony Server.

Enabling or Disabling Accounting Server

To enable or disable an accounting server:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.

3 From the *Properties* tab, click *Accounting Server Configuration*

4 From the *UseAccountingServerAdmin* row, double-click the field in the same row under the *3COM Sip Call Processor* column.

- To enable, change to *true*.
- To disable, change to *false*.

5 Click *Save All*.

Enabling or Disabling Authentication Server

To enable or disable an authentication server:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor.*
3. From the *Properties* tab, click *Authentication Server Configuration.*
4. From the *UseAuthetication*ServerAdmin row, double-click the field in the same row under the *3COM Sip Call Processor* column.
   - To enable, change to *true*.
   - To disable, change to *false*.
5. Click *Save All*.

Enabling or Disabling Directory Server

To enable or disable a directory server:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor.*
3. From the *Properties* tab, click *Directory Server Configuration.*
4. From the *UseDirectoryServerAdmin* row, double-click the field in the same row under the *3COM Sip Call Processor* column.
   - To enable, change to *true*.
   - To disable, change to *false*.
5. Click *Save All*.

Enabling or Disabling VCX Data Server

To enable or disable a VCX data server:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor.*
3. From the *Properties* tab, click *Data Server Configuration.*
4. From the *UseDataServerAdmin* row, double-click the field in the same row under the *3COM Sip Call Processor* column.
   - To enable, change to *true*.
   - To disable, change to *false*.
5. Click *Save All*.

Monitoring Call Statistics

You can verify the number of active calls, attempted calls, successfully connected calls, and unsuccessful calls using EMS. To monitor call statistics for the call processor:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *Call Statistics*.
4. For description of each field, see Table 24.

Table 24 Call Statistics Field Attribute Descriptions

Attribute	Description
CurrentActiveCalls	This number defines the total number of calls that are in process of being connected, are already connected, or are in process of being disconnected.
TotalAttemptCalls	This number defines the total number of origination call attempts that were handled by the call processor.
TotalSuccessfulCalls	This number defines the total number of calls that were successfully connected through this call processor.
TotalUnsuccessfulCalls	This number defines the total number of calls that were dropped by this call processor or rejected by this call processor or calls that could not be connected.

Verifying State of a Call Processor

Use the *State* tab to view basic statistics for the VCX data server.

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3Com Sip Call Processor*.
3. From the *Properties* tab, click *State*.
4. For a description of each field, see Table 25.

Table 25 Call Processor State Tab

Attribute	Description	Settings
Operational State	Indicates the current operational state.	Read-only
Reserved	Indicates if the object is reserved by another user.	Read-only
Reserved by	Indicates who has reserved the object.	Read-only

(continued)

Table 25 Call Processor State Tab (continued)

Attribute	Description	Settings
Software status	The current operational state of the entity. If AdminStatus is down, then OperStatus should be down. If AdminStatus is changed to up, through the entity command interface, then OperStatus should change to up if the entity is operational; it should remain in the down state if and only if there is a fault that prevents it from going to the up state; it should remain in the notPresent state if the entity has missing components. If the entity is operational, but not responding to queries, the state is notResponding.	Read-only
Usage State	Indicates how busy the resource is.	Read-only

Call Processor Maintenance

This section provides maintenance tasks that are specific to just the call processor.

Restarting the Call Processor

To restart the Call Processor:

1. From the EMS explorer tree, navigate to the *3Com Sip Call Processor*.
2. Right-click the Call Processor and select *Maintenance* and then click *Hard Restart*.

Stopping the Call Processor

To stop the Call Processor:

1. From the EMS explorer tree, navigate to the *3Com Sip Call Processor*.
2. Right-click the Call Processor and select *Maintenance* and then click *Hard Shutdown*.

Verifying the Call Processor State

To verify the state of the Call Processor using EMS:

1. Login to EMS.
2. Navigate to the Call Processor.
3. The status indicator light that appears next to the *3COM Sip Call Processor* identifies these states:
   - green — it is running
   - red — it is down

5 CONFIGURING THE IP MESSAGING SYSTEM

Verifying State of an IP Messaging Server

Use the *State* tab to view basic statistics for the IP Messaging server.

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3COM IP Messaging System*.
3. From the *Properties* tab, click *State.*
4. For a description of each field, see Table 26.

Table 26 IP Messaging State Tab

Attribute	Description	Settings
Operational State	Indicates the current operational state.	Read-only
Reserved	Indicates if the object is reserved by another user.	Read-only
Reserved by	Indicates who has reserved the object.	Read-only
Software status	The current operational state of the entity. If AdminStatus is down, then OperStatus should be down. If AdminStatus is changed to up, through the entity command interface, then OperStatus should change to up if the entity is operational; it should remain in the down state if and only if there is a fault that prevents it from going to the up state; it should remain in the notPresent state if the entity has missing components. If the entity is operational, but not responding to queries, the state is notResponding.	Read-only
Usage State	Indicates how busy the resource is.	Read-only

IP Messaging Server Identification Tab

Use the *Identification* tab to view basic statistics for the IP Messaging server such as the software version.

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *IP Messaging System*.
3. From the *Properties* tab, click *Identification.*
4. For a description of each field, see Table 27.

Table 27 IP Messaging Identification Tab

Attribute	Description	Settings
Alias	A management defined alias for the entity saved across reboots.	String
Class	The internal schema className for this object.	Read-only
FQN	The fully qualified name of this object. This is the complete path from the root of all objects.	Read-only
Last State Change	The value of sysUpTime at the time the entity entered its current operational state.	Read-only
User Label	A label assign by the user.	String
Vendor	The vendor name of this software.	Read-only
Version	The current version of this software.	Read-only

Verifying IP Messaging Software Version

To verify what the IP Messaging software version is using EMS:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *IP Messaging System*.
3. From the *Properties* tab, click *Identification*.
4. The IP Messaging software version is listed, in the *Version* field.

Verifying Connection to Call Builder Interface

To verify if the IP Messaging Server is connected to the call builder interface (CBI) :

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *IP Messaging System*.
3. From the *Properties* tab, click *Status.*
4. The *Application Status* field, should show *connected*. If the CBI is not connected, the *Application Status* field shows *not connected*.

Configuring Call Builder Variables

This section outlines the various Call Builder components that are a part of the IP Messaging Server.

Configuring DTMF Payload

To configure the DTMF payload:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *IP Messaging System*.
3. From the *Properties* tab, click *Call Builder Config.*
4. In the *DefaultDTMFPayloadType* field, type in a number between 1 and 256.
5. Click *Save All*.

Configuring RTP

RTP packets are generally sent from the Call Builder to the server that the VCX data server is located on.

To configure where RTP packets are sent:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *IP Messaging System*.
3. From the *Properties* tab, click *Call Builder Config.*
4. In the *RTPAddress* field, type the IP Address of the server you want to sent RTP packets to.
5. In the *RTPStartPort* field, type the port number of the server you want to send RTP packets to.
6. Click *Save All*.

Configuring Dialing Domain of IP Messaging Server

The dialing domain is used as part of a SIP phone number and helps determines how to route the call.

To configure the dialing domain:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *IP Messaging System*.
3. From the *Properties* tab, click *Call Builder Config.*
4. In the *SIPDefaultDialingDomain* field, type the dialing domain that you want to apply to the IP Messaging server.
5. Click *Save All*.

Configuring Call Processors for IP Messaging Server

This section provides instructions on how to define the primary and secondary call processor, which is necessary for call processing.

To configure the call processors associated with this IP Messaging server:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *IP Messaging System*.
3. From the *Properties* tab, click *Call Builder Config.*
4. In the *SIPProxy1* field, type the IP address of the primary call processor.
5. In the *SIPProxy2* field, type the IP address of the secondary call processor.
6. Click *Save All*.

Configuring SIP Registration

This section provides instructions on how to enable or disable SIP registration (default is enabled) and how to configure the SIP Registration interval. Registration is used to ensure that end points are able to receive messages.

To configure the SIP Registration variables:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *IP Messaging System*.
3. From the *Properties* tab, click *Call Builder Config.*
4. In the *SIPRegistrationEnabled* field, choose *true* to enable SIP registration or *false* to disable it.
5. In the *SIPRegistrationInterval* field, specify (in minutes) how often you want SIP registration to occur. The default is five minutes.

6 Click *Save All*.

Configuring the Signaling Server

This section provides instructions on how to configure the VCX data server IP address and port number.

To configure VCX data server IP address and port number associated with the call builder:

1 Log into EMS.

2 From the *Explorer* tab, navigate to the *IP Messaging System*.

3 From the *Properties* tab, click *Call Builder Config*.

4 In the *SIPSignallingAddress* field, type the IP address of the server that the VCX data server is located on.

5 In the *SIPSignallingPort* field, type the port of the VCX data server where that receives the SIP messages.

6 Click *Save All*.

IP Messaging Server Maintenance

This section describes maintenance tasks that are specific to just the IP Messaging server.

Verifying the IP Messaging Server State

To verify the state of the IP Messaging Server:

1 Log in to EMS.

2 Navigate to the IP Messaging Server.

3 The status indicator light that appears next to the *3Com IP Messaging System* identifies these system states:

- Green — The IP Messaging server is running
- Red — The IP Messaging server is not running

Gracefully Stopping the IP Messaging Server

When an IP Messaging server is stopped gracefully, all calls that are in progress continue their connections, but no new calls can take place.

To stop the IP Messaging server:

1. From the EMS explorer tree, navigate to the *3Com IP Messaging System*.
2. Right-click the IP Messaging server, select *Maintenance* , and then click *Graceful Shutdown*.

Stopping the IP Messaging Server Hard

When an IP Messaging server is stopped hard, all calls that are in progress are disconnected.

To stop the IP Messaging server hard:

1. From the EMS explorer tree, navigate to the *3Com IP Messaging System*.
2. Right-click the IP Messaging server, select *Maintenance,* and then click *Hard Shutdown*.

Gracefully Restarting the IP Messaging Server

When an IP Messaging server is restarted gracefully, all calls that are in progress continue their connections, but no new calls can take place.

To gracefully restart the IP Messaging server:

1. From the EMS explorer tree, navigate to the *3Com IP Messaging System*.
2. Right-click the IP Messaging Server and select *Maintenance* and then click *Graceful Restart*.

Restarting the IP Messaging Server Hard

When an IP Messaging server is restarted hard, all calls that are in progress are disconnected.

To perform a hard restart of the IP Messaging server:

1. From the EMS explorer tree, navigate to the *3Com IP Messaging System*.
2. Right-click the IP Messaging Server and select *Maintenance* and then click *Hard Restart*.

6 CONFIGURING THE SIP PHONE DOWNLOADER

This chapter describes how to configure the SIP phone downloader. The SIP downloader is initially configured through the installation scripts. Use this chapter to edit any SIP downloader information.

Configuring the SIP Phone Downloader

Use this section to configure the SIP phone downloader. The Local Device Name needs to be changed to what ever your host is configured as.

CAUTION: *If using a dual download environment, two issues can arise: 1) The WAN link utilization can be stressed during a large download (especially if the primary server is down). For example, if you have a large number of phones pointing to a primary download server on the LAN and a secondary download server that sits across a WAN. If the primary building takes a power hit, the download server might take 15 minutes or more to recover, but the phones will all reboot in a few seconds and begin looking for their download. This will begin to flood the WAN link. 2) If there is a version mismatch, you could get into a situation where phones go into a continuous cycle of rebooting and downloading.*

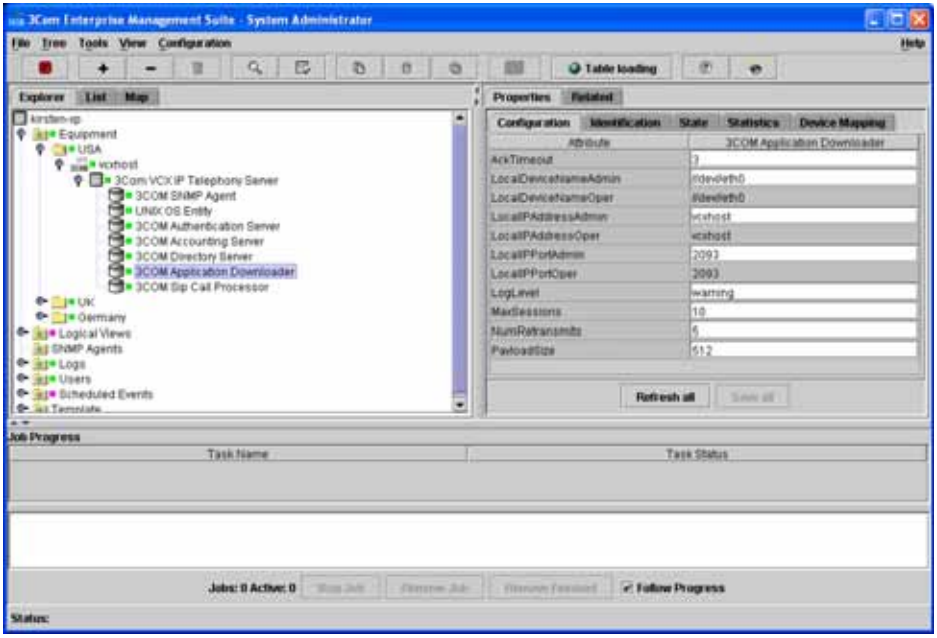
Choose one of the 2 Ethernet interfaces (recommend eth1) you want this SIP phone downloader to use.

In super user mode, type the following to print a list of the various downloaders:

```
ifconfig -a
```

1 Launch EMS and discover the server that the SIP Phone Downloader is installed on. The navigation tree looks similar to Figure 1.

Figure 1 SIP Phone Downloader Configuration Tab



2 Click *3COM Application Downloade***r**.

3 From the *Properties* tabs, click *Configuration*.

4 Set the following attributes by double-clicking each field:

   a **LocalDeviceNameAdmin** — Use //dev//eth1, which is your NIC device.

   Make sure the NIC device has read and write permissions for the cworks user; otherwise, change the permission on this device or run this application as the super user.

   b **LocalIPAddressAdmin** — the IP Address of the server the SIP Phone Downloader is installed on. It picks a default.

   c **LocalIPPortAdmin** — Do not change this since it cannot be configured on the 3Com phone.

5 Click *Save all*.

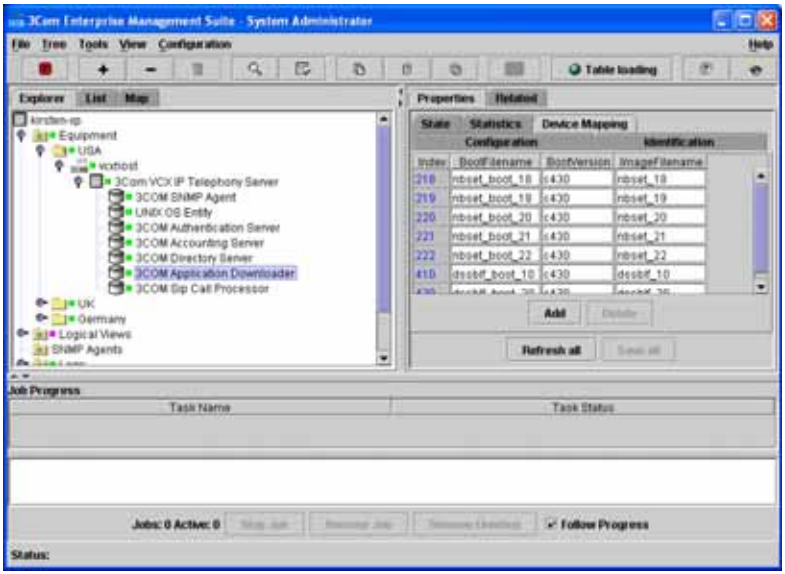
Device Mapping

The SIP Phone Downloader application comes with two images: ndset_boot_19 and nbset_19, and the boot version is a508. All images need to be stored in the $HOME/sipdl/images.

To configure the device mapping:

1 Launch EMS and discover the server that the SIP Phone Downloader is installed on. The navigation tree looks similar to Figure 2.

Figure 2 SIP Phone Downloader Device Mapping Tab



2 Click *3Com Application Downloader*.

3 From the *Properties* tabs, click *Device Mapping*.

4 Set the following attributes by double-clicking each field:

- **BootFilename** — SIP phone downloader code and firmware code provided by the NBX phone. This value should be set to nbset_boot_19.
- **BootVersion** — Version of the firmware code. This value should be set to a508.
- **ImageFilename** — Application code and SIP Phone application. This value should be set to nbset_19.

5 Click *Save all*.

SIP Phone Downloader Maintenance

This section provides maintenance tasks that are specific to just the application downloader.

Restarting the Application Downloader

To restart the application downloader:

1. From the EMS explorer tree, navigate to the *3Com Application Downloader*.
2. Right-click the application downloader and select *Maintenance* and then click *Hard Restart*.

Stopping the Application Downloader

To stop the application downloader:

1. From the EMS explorer tree, navigate to the *3Com Application Downloader*.
2. Right-click the application downloader and select *Maintenance* and then click *Hard Shutdown*.

Verifying the Application Downloader State

To verify the state of the application downloader:

1. Login to EMS.
2. Navigate to the application downloader.
3. The status indicator light that appears next to the *3COM Application Downloader* identifies these states:
   - green — it is running
   - red — it is down

7 CONFIGURING THE COMMON AGENT

The Common Agent is referred to as the SNMP Agent in EMS.

Verifying State of the Common Agent

Use the *State* tab to view basic statistics for the common agent.

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3COM SNMP Agent*.
3. From the *Properties* tab, click *State*.
4. For a description of each field, see Table 28.

Table 28 Common Agent State Tab

Attribute	Description	Settings
Operational State	Indicates the current operational state.	Read-only
Reserved	Indicates if the object is reserved by another user.	Read-only
Reserved by	Indicates who has reserved the object.	Read-only
Software status	The current operational state of the entity. If AdminStatus is down, then OperStatus should be down. If AdminStatus is changed to up, through the entity command interface, then OperStatus should change to up if the entity is operational; it should remain in the down state if and only if there is a fault that prevents it from going to the up state; it should remain in the notPresent state if the entity has missing components. If the entity is operational, but not responding to queries, the state is notResponding.	Read-only
Usage State	Indicates how busy the resource is.	Read-only

Verifying Common Agent Software Version

To verify what the common agent version is:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3COM SNMP Agent*.
3. From the *Properties* tab, click *Identification*.
4. From the *Version* field, the SNMP agent version is listed.

Common Agent Identification Tab

Use the *Identification* tab to view basic statistics for the common agent such as the software version.

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *3COM SNMP Agent*.
3. From the *Properties* tab, click *State.*
4. For a description of each field, see Table 29.

Table 29 IP Messaging Identification Tab

Attribute	Description	Settings
Alias	A management defined alias for the entity saved across reboots.	String
Class	The internal schema className for this object.	Read-only
FQN	The fully qualified name of this object. This is the complete path from the root of all objects.	Read-only
Last State Change	The value of sysUpTime at the time the entity entered its current operational state.	Read-only
User Label	A label assign by the user.	String
Vendor	The vendor name of this software.	Read-only
Version	The current version of this software.	Read-only

Enabling Back-end Server Traps

Back-end server traps can be enabled and disabled at the 3COM SNMP Agent level.

Alarm notification requires two components: a device (the 3Com VCX IP Telephony Server) to send traps and a device (an alarm server) to receive them and alert the network manager. Traps are sent over the Simple Network Management Protocol (SNMP), which runs on the User Datagram Protocol / Internet Protocol (UDP/IP).

First, use Enterprise Management Suite to tell the 3Com VCX IP Telephony Server where to send traps. Then use Enterprise Management Suite to enable the traps. Finally, start the trap generation.

Configuring Trap Destinations

To configure a trap destination:

1. From the *Explorer* tab, select *3Com VCX IP Telephony Server* to configure.
2. From the *Properties* tab, select *Trap Destinations*.
3. At the bottom of the right-hand pane, click *Add*.

   The *Add Row to Table* dialog box opens.
4. Type the *IP address* and *Community string* for the trap destination.
5. Click *OK*.

   The Trap Destinations tab changes to show the new trap destination.

Enabling Back-end Server Traps

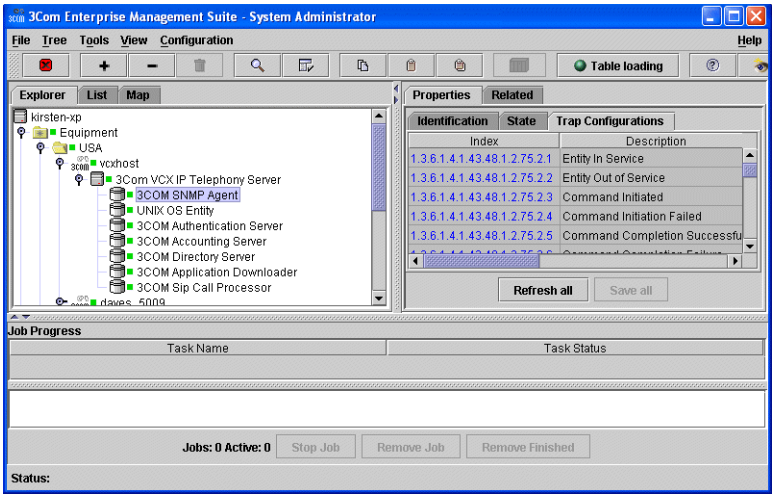
The 3Com VCX IP Telephony Server can generate traps when the authentication server changes state.

To enable back-end server traps:

1. From the *Explorer* tab, click *3Com VCX IP Telephony Server* to configure.
2. Select the *3COM SNMP Agent* element.
3. From the *Properties* tab, select *Trap Configurations*.

   Figure 3 shows the location for all back-end server traps.

Figure 3 Enabling Back-end Server Traps



4 Enable and disable SNMP traps according to your customized needs.

5 Click *Save all*.

6 Back up the server configuration.

Receiving Traps To start and stop receiving SNMP traps:

1 From the *Explorer* tab, right-click *3Com VCX IP Telephony Server*.

2 From the pop-up menu, select *Traps*.

From the pop-up menu, select *Start receiving* to begin receiving SNMP traps or *Stop receiving* to stop receiving SNMP traps.

Common Agent Maintenance

This section provides maintenance tasks that are specific to just the Common Agent.

Restarting the Common Agent

To restart the Common Agent:

1. From the EMS explorer tree, navigate to the *3Com SNMP Agent*.
2. Right-click the SNMP Agent and select *Maintenance* and then click *Hard Restart*.

Verifying the Common Agent State

To verify the state of the Common Agent:

1. Login to EMS.
2. Navigate to the SNMP Agent.
3. The status indicator light that appears next to the *3Com SNMP Agent* identifies these states:
   - green — it is running
   - red — it is down

8 CONFIGURING THE OS ENTITY

The 3Com Convergence Applications Suite is build on 3Com Linux. This chapter provides details on how to verify the O/S version a server is built on and whether or not it is operational.

Verifying State of the O/S

Use the *State* tab to view basic statistics for the operating system.

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *UNIX OS Entity*.
3. From the *Properties* tab, click *State*.
4. For a description of each field, see Table 30.

Table 30 O/S Entity State Tab

Attribute	Description	Settings
Operational State	Indicates the current operational state.	Read-only
Reserved	Indicates if the object is reserved by another user.	Read-only
Reserved by	Indicates who has reserved the object.	Read-only
Software status	The current operational state of the entity. If AdminStatus is down, then OperStatus should be down. If AdminStatus is changed to up, through the entity command interface, then OperStatus should change to up if the entity is operational; it should remain in the down state if and only if there is a fault that prevents it from going to the up state; it should remain in the notPresent state if the entity has missing components. If the entity is operational, but not responding to queries, the state is notResponding.	Read-only
Usage State	Indicates how busy the resource is.	Read-only

Verifying O/S Software Version

To verify what the operating system version is:

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *UNIX OS Entity*.
3. From the *Properties* tab, click *Identification*.
4. From the *Version* field, the O/S version is listed.

O/S Identification Tab

Use the *Identification* tab to view basic statistics for the operating system such as the software version.

1. Log into EMS.
2. From the *Explorer* tab, navigate to the *UNIX OS Entity*.
3. From the *Properties* tab, click *State*.
4. For a description of each field, see Table 31.

Table 31 IP Messaging Identification Tab

Attribute	Description	Settings
Alias	A management defined alias for the entity saved across reboots.	String
Class	The internal schema className for this object.	Read-only
FQN	The fully qualified name of this object. This is the complete path from the root of all objects.	Read-only
Last State Change	The value of sysUpTime at the time the entity entered its current operational state.	Read-only
User Label	A label assign by the user.	String
Vendor	The vendor name of this software.	Read-only
Version	The current version of this software.	Read-only

O/S Entity Maintenance

This section provides maintenance tasks that are specific to just the O/S Entity.

Gracefully Restarting the O/S Entity

To gracefully restart the O/S Entity:

1. From the EMS explorer tree, navigate to the *UNIX OS Entity*.
2. Right-click the O/S Entity and select *Maintenance* and then click *Hard Restart*.

Verifying the O/S Entity State

To verify the state of the O/S Entity:

1. Login to EMS.
2. Navigate to the O/S Entity.
3. The status indicator light that appears next to the *UNIX OS Entity* identifies these states:
   - green — it is running
   - red — it is down

9 Upgrading VCX Systems and Components

This chapter provides details on how to remotely upgrade your VCX systems and/or components using EMS.

The following configurations and/or components can be upgraded using EMS:

- Upgrading a Multiple Site Configuration from 6.0.x to 6.0.y
- Upgrading the VCX IP Telephony Software
- Upgrading the IP Messaging Software
- Upgrading the SIP Phone Downloader and Boot File Software

Upgrading a Multiple Site Configuration from 6.0.x to 6.0.y

This section describes how to upgrade a VCX configuration where there is more than one regional office and branch offices present. These instructions assume a two region office configuration where the regional offices use global messaging and the branch offices use local messaging configurations. When upgrading a region to region office configuration, replication needs to be dropped.

Follow this procedure to upgrade your VCX system from version 6.0.x to 6.0.y. Following this procedure upgrades the VCX system to an operational state and assumes the VCX system was operational prior to the upgrade occurring.

Multiple Site Upgrade Order

When upgrading a multiple site configuration keep this order in mind, which is outlined in more detail in the actual procedure:

- First, upgrade the replicated regional office VCX data servers.
- Second, upgrade the regional office IP Messaging servers.
- Third, upgrade the regional office call processing server.

- Fourth, upgrade the branch offices, starting with any that are hosted by the primary regional office.

Upgrading a Multiple Site Configuration

Use this section to upgrade a two region office configuration where the regional offices use global messaging and the branch offices use local messaging configurations.

The software upgrade package is provided by 3Com or your authorized 3Com reseller and must be installed using the following sequence of steps.

1. Untar the upgrade tar file(s) and copy them to the EMS server in the *<EMS_INSTALL_DIR>/software_upgrades/voice/SystemUpgrades* directory. This includes any software for the VCX data server, IP Messaging server, and/or the VCX call processing server.
2. If you have a replicated system, clear any replication errors before performing an upgrade, otherwise, go to step 3.
   a. From the EMS client explorer tree, for each VCX data server you want to drop replication from, click *3Com VCX IP Telephony Server*.
   b. Right-click *3Com VCX IP Telephony Server*, select *Database Replication*, and then click *Clear Replication Errors*.

You can only delete replication errors on regional offices, not on branch offices.

3. Stop Tomcat on the region 1 and 2 VCX call processing server.
   a. From the EMS client explorer tree, for the region 1 VCX call processing server, click *3Com VCX IP Telephony Server*.
   b. Right-click *3Com VCX IP Telephony Server*, select *Web Provisioning*, and then click *Disable Web Provisioning*.
   c. From the EMS client explorer tree, for the region 2 VCX call processing server, click *3Com VCX IP Telephony Server*.
   d. Right-click *3Com VCX IP Telephony Server*, select *Web Provisioning*, and then click *Disable Web Provisioning*.
4. Stop replication between the region 1 and 2 VCX data servers.
   a. From the EMS client explorer tree, for the region 1 VCX data server, click *3Com VCX IP Telephony Server*.
   b. Right-click *3Com VCX IP Telephony Server*, select *Database Replication*, and then click *Drop Replication*.

5 Upgrade the region 1 VCX data server.

a From the EMS client explorer tree, for the region 1 VCX data server, click *3Com VCX IP Telephony Server*.

b From the right-hand of the pane, click the *Planned Upgrades* tab.

For each of these fields, the default setting is *None Planned*.

c Double-click the *Planned System Upgrade* field and click the *vcx-dataserver-<version>.tar* file from the drop-down menu.

d Click *Save all* to commit the filename to the database.

Once an upgrade file has been selected, the file must be transferred to the server.

e To transfer the file to the server, from the VCX data server *3Com VCX IP Telephony Server* right-click menu, click *Transfer Upgrade Images* and then click *Transfer System Upgrade File*.

These options are only available is a file has been selected for upgrade. The file is SFTP'd to the server, using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

Now the upgrade file needs to be installed.

With *IP Telephony upgrades*, this only unpacks the tar file and creates the relevant directories on the server, it does not switch the running version to the new version.

f To install the upgrade file to the server, from the VCX data server *3Com VCX IP Telephony Server* right-click menu, click *Install Upgrade Images* and then click *Install System Upgrade*.

g Verify that the upgrade succeeded. To verify that the upgrade succeeded, the VCX data server *3Com VCX IP Telephony Server* right-click menu, click *Install Upgrade Images* and then click *Verify Upgrade*.

h Switch the software version for the VCX data server. A switchover needs to be performed before the new version takes effect.

i To switchover the VCX data server software, from the data server *3Com VCX IP Telephony Server* right-click menu, click *Install Upgrade Images* and then click *Switchover Version*.

The server reboots and EMS provides status of the switchover progress.

To verify the version numbers of the newly installed software, click the each component from the explorer tree and click the *Identification* tab.

j Click *Refresh all* to confirm that the latest software has been installed.

6 Stop the region 1 VCX data server before upgrading the region 2 VCX data server.

a From the EMS client explorer tree, for the region 1 VCX data server, click *3Com VCX IP Telephony Server*.

b Expand *3Com VCX IP Telephony Server,* and click *3Com VCX Data Server.*

c Right-click *3Com VCX Data Server,* select *Maintenance*, and then click *Hard Shutdown.*

7 Stop replication between the region 2 and 1 VCX data servers.

a From the EMS client explorer tree, for the region 2 VCX data server, click *3Com VCX IP Telephony Server*.

b Right-click *3Com VCX IP Telephony Server*, select *Database Replication*, and then click *Drop Replication*.

8 Upgrade the region 2 VCX data server. Repeat step a through step j in step 5 except perform the steps on the region 2 VCX data server.

9 Stop the region 2 VCX data server.

a From the EMS client explorer tree, for the region 2 VCX data server, click *3Com VCX IP Telephony Server*.

b Expand *3Com VCX IP Telephony Server,* and click *3Com VCX Data Server.*

c Right-click *3Com VCX Data Server,* select *Maintenance,* and then click *Hard Shutdown.*

10 Upgrade the region 2 VCX data server database on region 1.

a From the EMS client explorer tree, for the region 1 VCX data server, click *3Com VCX IP Telephony Server*.

b From the right-hand pane, click the *DB Schema Upgrade* tab.

c From the *Database Schema Site ID* field, enter the Region 2 site ID.

d Click *Save All*.

e Click the *3Com VCX IP Telephony Server* for the region 2 VCX data server.

f Right-click *3Com VCX IP Telephony Server*, and select *Database Upgrade*, and then click *Upgrade Database Schema*.

11 Upgrade the region 1 VCX data server database on region 2.

a From the EMS client explorer tree, for the region 2 VCX data server, click *3Com VCX IP Telephony Server*.

b From the right-hand pane, click the *DB Schema Upgrade* tab.

c From the *Database Schema Site ID* field, enter the Region 1 site ID.

d Click *Save All*.

e Click the *3Com VCX IP Telephony Server* for the region 1 VCX data server.

f Right-click *3Com VCX IP Telephony Server*, and select *Database Upgrade*, and then click *Upgrade Database Schema*.

12 Setup replication for the region 1 VCX data server.

a From the EMS client explorer tree, for the region 1 VCX data server, click *3Com VCX IP Telephony Server*.

b In the right-hand pane, click the *Replication Settings* tab.

c From the *Master Def Site IP Address* field, enter the IP Address of the master definition site (usually the region 1 primary VCX data server).

d From the *Master Site IP Address* field, enter the IP Address of the master site (usually the region 2 primary VCX data server).

e From the *Site ID* field, enter the site ID of the Region 1 VCX data server.

f Click *Save All*.

g Right-click *3Com VCX IP Telephony Server*, select *Database Replication,* and then click *Setup Database Replication.*

13 Setup replication for the region 2 VCX data server.

a From the EMS client explorer tree, for the region 2 VCX data server, click *3Com VCX IP Telephony Server*.

b In the right-hand pane, click the *Replication Settings* tab.

c From the *Master Def Site IP Address* field, enter the IP Address of the master definition site (usually the region 2 primary VCX data server).

d From the *Master Site IP Address* field, enter the IP Address of the master site (usually the region 1 primary VCX data server).

e From the *Site ID* field, enter the site ID of the Region 1 VCX data server.

f Click *Save All*.

g Right-click *3Com VCX IP Telephony Server*, select *Database Replication,* and then click *Setup Database Replication.*

14 Start the Region 1 VCX data server. This cannot be done until the replication setup is finished, which takes a minimum of 20 minutes.

To verify if the replication is finished, right-click *3Com VCX IP Telephony Server* of the VCX data server, select *Database Replication*, and then click *Check Database Replication.* Once complete the *Job Status* pane of the EMS client lists `Check Database Replication complete`.

a From the EMS client explorer tree, for the region 1 VCX data server, click *3Com VCX IP Telephony Server*.

b Expand *3Com VCX IP Telephony Server,* and click *3Com VCX Data Server.*

c Right-click *3Com VCX Data Server,* select *Maintenance,* and then click *Hard Restart.*

15 Start the Region 2 VCX data server. This cannot be done until the replication setup is finish, which takes a minimum of 20 minutes.

To verify if the replication is finished, right-click *3Com VCX IP Telephony Server* of the VCX data server, select *Database Replication*, and then click *Check Database Replication.* Once complete the *Job Status* pane of the EMS client lists `Check Database Replication complete`.

a From the EMS client explorer tree, for the region 2 VCX data server, click *3Com VCX IP Telephony Server*.

b Expand *3Com VCX IP Telephony Server,* and click *3Com VCX Data Server.*

c Right-click *3Com VCX Data Server,* select *Maintenance,* and then click *Hard Restart.*

16 Shut down the primary IP Messaging server.

a From the EMS client explorer tree, for the primary IP Messaging server, click *3Com VCX IP Telephony Server*.

b Expand *3Com VCX IP Telephony Server,* and click *3Com IP Messaging System.*

c Right-click *3Com IP Messaging System,* select *Maintenance,* and then click *Graceful Shutdown.*

17 Shut down the secondary IP Messaging server.

a From the EMS client explorer tree, for the secondary IP Messaging server, click *3Com VCX IP Telephony Server*.

b Expand *3Com VCX IP Telephony Server,* and click *3Com IP Messaging System.*

c Right-click *3Com IP Messaging System,* select *Maintenance,* and then click *Graceful Shutdown.*

18 Upgrade the primary IP Messaging server.

a From the EMS client explorer tree, for the primary IP Messaging server, click *3Com VCX IP Telephony Server*.

b In the right-hand pane, click the *Planned Upgrades* tab.

c Double-click the *Planned IP Messaging Upgrade* field and click the *vcx-ipmsg-<version>.tar* file from the drop-down menu.

d Click *Save all* to commit the tar file to the database.

Once an upgrade tar file has been selected, the tar file must be transferred to the IP Messaging server.

e To transfer the tar file to the server, from the *3Com VCX IP Telephony Server* right-click menu, select *Transfer Upgrade Images,* and then click *Transfer IPMSG Upgrade File*.

f These options are only available if a file has been selected for upgrade. The file is trasferred to the server using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

Next the upgrade tar file needs to be installed, which is the last step before the new version becomes active.

g To install the upgrade file on the IP Messaging server, for the primary IP Messaging server, click *3Com VCX IP Telephony Server.*

h Right-click the *3Com VCX IP Telephony Server*, select *Install Upgrade Images,* and then click *Install IPMSG Upgrade*.

i To verify the version number of the newly installed software, click the IP Messaging server from the explorer tree and then click the *Identification* tab.

j Click *Refresh all* to confirm that the latest software has been installed.

19 Stop the primary IP Messasing server.

a From the EMS client explorer tree, for the primary IP Messaging server, click *3Com VCX IP Telephony Server*.

b Expand *3Com VCX IP Telephony Server,* and click *3Com IP Messaging System.*

c Right-click *3Com IP Messaging System,* select *Maintenance,* and then click *Graceful Shutdown*.

20 Upgrade the secondary IP Messaging server.

a From the EMS client explorer tree, for the secondary IP Messaging server, click *3Com VCX IP Telephony Server*.

b In the right-hand pane, click the *Planned Upgrades* tab.

c Double-click the *Planned IP Messaging Upgrade* field and click the *vcx-ipmsg-<version>.tar* file from the drop-down menu.

d Click *Save all* to commit the tar file to the database.

Once an upgrade tar file has been selected, the tar file must be transferred to the IP Messaging server.

e To transfer the tar file to the server, from the *3Com VCX IP Telephony Server* right-click menu, select *Transfer Upgrade Images,* and then click *Transfer IPMSG Upgrade File*.

f These options are only available if a file has been selected for upgrade. The file is trasferred to the server using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

Next the upgrade tar file needs to be installed, which is the last step before the new version becomes active.

g To install the upgrade file on the IP Messaging server, for the secondary IP Messaging server, click *3Com VCX IP Telephony Server.*

h Right-click the *3Com VCX IP Telephony Server*, select *Install Upgrade Images,* and then click *Install IPMSG Upgrade*.

i To verify the version number of the newly installed software, click the IP Messaging server from the explorer tree and then click the *Identification* tab.

j Click *Refresh all* to confirm that the latest software has been installed.

21 Restart the primary IP Messasing server.

a From the EMS client explorer tree, for the primary IP Messaging server, click *3Com VCX IP Telephony Server*.

b Expand *3Com VCX IP Telephony Server,* and click *3Com IP Messaging System.*

c Right-click *3Com IP Messaging System,* select *Maintenance,* and then click *Graceful Restart.*

22 Upgrade the primary VCX call processing server.

a From the EMS client explorer tree, for the primary VCX call processing server, click *3Com VCX IP Telephony Server.*

b In the right-hand pane, click the *Planned Upgrades* tab.

c Double-click the *Planned System Upgrade* field and click the *vcx-callserver-<version>.tar* file from the drop-down menu.

d Click *Save all* to commit the tar file to the database.

Once an upgrade tar file has been selected, the tar file must be transferred to the VCX calling processing server.

e To transfer the tar file to the server, from the *3Com VCX IP Telephony Server* right-click menu, select *Transfer Upgrade Images,* and then click *Transfer System Upgrade File*.

f These options are only available if a file has been selected for upgrade. The file is trasferred to the server using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

Next the upgrade tar file needs to be installed, which is the last step before the new version becomes active.

g To install the upgrade file on the VCX calling processing server, for the primary VCX calling processing server, click *3Com VCX IP Telephony Server.*

h Right-click the *3Com VCX IP Telephony Server*, select *Install Upgrade Images,* and then click *Install System Upgrade*.

i To verify the version number of the newly installed software, from the explorer tree, for the primary VCX call processing server, click *3Com VCX IP Telephony Server.*

j In the left hand pane, click the *Identification* tab.

k Click *Refresh all* to confirm that the latest software has been installed.

23 Upgrade the secondary VCX call processing server.

a From the EMS client explorer tree, for the secondary VCX call processing server, click *3Com VCX IP Telephony Server.*

b In the right-hand pane, click the *Planned Upgrades* tab.

c Double-click the *Planned System Upgrade* field and click the *vcx-callserver-<version>.tar* file from the drop-down menu.

d Click *Save all* to commit the tar file to the database.

Once an upgrade tar file has been selected, the tar file must be transferred to the VCX calling processing server.

e To transfer the tar file to the server, from the *3Com VCX IP Telephony Server* right-click menu, select *Transfer Upgrade Images,* and then click *Transfer System Upgrade File*.

f These options are only available if a file has been selected for upgrade. The file is trasferred to the server using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

Next the upgrade tar file needs to be installed, which is the last step before the new version becomes active.

g To install the upgrade file on the VCX calling processing server, for the secondary VCX calling processing server, click *3Com VCX IP Telephony Server.*

h Right-click the *3Com VCX IP Telephony Server*, select *Install Upgrade Images,* and then click *Install System Upgrade*.

i To verify the version number of the newly installed software, from the explorer tree, for the secondary VCX call processing server, click *3Com VCX IP Telephony Server*.

j In the left hand pane, click the *Identification* tab.

k Click *Refresh all* to confirm that the latest software has been installed.

24 Upgrade the Billing Support server.

a From the EMS client explorer tree, for the server where the billing support server is installed, click *3Com VCX IP Telephony Server*.

b In the right-hand pane, click the *Planned Upgrades* tab.

c Double-click the *Planned System Upgrade* field and click the *vcx-bss-<version>.tar* file from the drop-down menu.

d Click *Save all* to commit the tar file to the database.

Once an upgrade tar file has been selected, the tar file must be transferred to the billing support server.

e To transfer the tar file to the server, from the *3Com VCX IP Telephony Server* right-click menu, select *Transfer Upgrade Images,* and then click *Transfer System Upgrade File*.

f These options are only available if a file has been selected for upgrade. The file is trasferred to the server using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

Next the upgrade tar file needs to be installed, which is the last step before the new version becomes active.

g To install the upgrade file on the billing support server, click *3Com VCX IP Telephony Server.*

h Right-click the *3Com VCX IP Telephony Server*, select *Install Upgrade Images,* and then click *Install System Upgrade*.

25 Upgrade the branch office(s), starting with any that are a part of Region 1.

a Stop Tomcat on the host VCX call processing server.

b From the EMS client explorer tree, for the host VCX call processing server, click *3Com VCX IP Telephony Server.*

c Right-click *3Com VCX IP Telephony Server*, select *Web Provisioning*, and then click *Disable Web Provisioning.*

- To upgrade an *IP Telephony Server* branch office go to step 26 on page 87.
- To upgrade an *IP Telephony Server and IP Messaging Server* branch office go to step 27 on page 88.

26 Upgrade an IP Telephony Server branch office.

a From the EMS client explorer tree, for the branch office, click *3Com VCX IP Telephony Server.*

b In the right-hand pane, click the *Planned Upgrades* tab.

c Double-click the *Planned System Upgrade* field and click the *vcx-softswitch<version>.tar* file from the drop-down menu.

d Click *Save all* to commit the tar file to the database.

Once an upgrade tar file has been selected, the tar file must be transferred to the branch office server.

e To transfer the tar file to the server, from the *3Com VCX IP Telephony Server* right-click menu, select *Transfer Upgrade Images,* and then click *Transfer System Upgrade File*.

f These options are only available if a file has been selected for upgrade. The file is trasferred to the server using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

Next the upgrade tar file needs to be installed, which is the last step before the new version becomes active.

g To install the upgrade file on the branch office server, for the branch office server, click *3Com VCX IP Telephony Server.*

h Right-click the *3Com VCX IP Telephony Server*, select *Install Upgrade Images,* and then click *Install System Upgrade*.

i To verify the version number of the newly installed software, from the explorer tree, for the branch office server, click *3Com VCX IP Telephony Server.*

j In the left hand pane, click the *Identification* tab.

k Click *Refresh all* to confirm that the latest software has been installed.

If you have another branch office to upgrade in this region, go to step 25 on page 87.

If this is the last branch office to upgrade for this region, go to step 28 on page 89.

27 Upgrade an IP Telephony Server and IP Messaging branch office.

a From the EMS client explorer tree, for the branch office, click *3Com VCX IP Telephony Server.*

b In the right-hand pane, click the *Planned Upgrades* tab.

c Double-click the *Planned System Upgrade* field and click the *vcx-all-<version>.tar* file from the drop-down menu.

d Click *Save all* to commit the tar file to the database.

Once an upgrade tar file has been selected, the tar file must be transferred to the branch office server.

e To transfer the tar file to the server, from the *3Com VCX IP Telephony Server* right-click menu, select *Transfer Upgrade Images,* and then click *Transfer System Upgrade File*.

f These options are only available if a file has been selected for upgrade. The file is trasferred to the server using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

Next the upgrade tar file needs to be installed, which is the last step before the new version becomes active.

g To install the upgrade file on the branch office server, for the branch office server, click *3Com VCX IP Telephony Server.*

h Right-click the *3Com VCX IP Telephony Server*, select *Install Upgrade Images,* and then click *Install System Upgrade*.

i To verify the version number of the newly installed software, from the explorer tree, for the branch office server, click *3Com VCX IP Telephony Server*.

j In the left hand pane, click the *Identification* tab.

k Click *Refresh all* to confirm that the latest software has been installed.

If you have another branch office to upgrade in this region, go to step 25 on page 87.

If this is the last branch office to upgrade for this region, go to step 28 on page 89.

28 Restart Tomcat on the host regional office VCX call processing server.

a From the EMS client explorer tree, for the host VCX call processing server, click *3Com VCX IP Telephony Server*.

b Right-click *3Com VCX IP Telephony Server*, select *Web Provisioning*, and then click *Enable Web Provisioning*.

If you have another branch office to upgrade in a different region, go to step 25 on page 87.

If you have no more branch offices to upgrade, the upgrade is complete.

Upgrading the VCX IP Telephony Software

EMS provides support for remote software upgrades of VCX IP Telephony software.

The software upgrade package is provided by 3Com or your authorized 3Com reseller and must be installed using the following sequence of steps.

1. The software (relevant tar files) to be upgraded MUST be located in the *<EMS_INSTALL_DIR>/software_upgrades/voice/SystemUpgrades* directory on the EMS server.
2. Once the tar file is in the correct directory, from the EMS client explorer tree, click *3Com VCX IP Telephony Server.*
3. From the right-hand of the pane, click the *Planned Upgrades* tab.

   For each of these fields, the default setting is *None Planned*.
4. Double-click the *Planned System Upgrade* field to choose the upgrade file.
5. Click *Save all* to commit the filename to the database.

   Once an upgrade file has been selected, the file must be transferred to the server.
6. To transfer the file to the server, from the *3Com VCX IP Telephony Server* right-click menu, click *Transfer Upgrade Images* and then click *Transfer System Upgrade File.*

   These options are only available is a file has been selected for upgrade. The file is SFTP'd to the server, using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

   Now the upgrade file needs to be installed.

   With *IP Telephony upgrades*, this only unpacks the tar file and creates the relevant directories on the server, it does not switch the running version to the new version.
7. To install the upgrade file to the server, from the *3Com VCX IP Telephony Server* right-click menu, click *Install Upgrade Images* and then click *Install System Upgrade.*
8. Verify that the upgrade succeeded. To verify that the upgrade succeeded, the *3Com VCX IP Telephony Server* right-click menu, click *Install Upgrade Images* and then click *Verify Upgrade*.

9 Switch the software version for the VCX system software. A switchover needs to be performed before the new version will take effect.

10 To switchover the VCX system software, from the *3Com VCX IP Telephony Server* right-click menu, click *Install Upgrade Images* and then click *Switchover Version*.

The server reboots and EMS provides status of the switchover progress.

11 To verify the version numbers of the newly installed software, click the each component from the explorer tree and click the *Identification* tab.

12 Click *Refresh all* to confirm that the latest software has been installed.

Uploading Music on Hold Files

This section provides information on how to remotely upload Music on Hold files using EMS.

The following sequence of steps must be followed in order to upload and activate a Music on Hold file for a IP Telephony server with IP Messaging present:

1. Copy the Music on Hold files that you want to upload to in the *<EMS_INSTALL_DIR>/software_upgrades/voice/MusicOnHoldFiles* directory.
2. From the EMS client, go to the *3Com VCX IP Telephony Server* level within the Equipment folder.
3. In the right-hand pane, click the *Planned Upgrades* tab.
4. In the *Planned Music on Hold Upgrades* field, click the correct file from the drop-down list. The file you copied in step 1 is listed in the drop-down menu.

   Once the file has been selected, you must upload it to the system. Selecting a file enables the *Transfer Music on Hold File* option in the *Transfer Upgrade Images* right-click menu.
5. Click *Save all*.
6. From the *3Com VCX IP Telephony Server* right-click menu, click *Transfer Upgrade Images* and then *Transfer Music on Hold.*

   The Music on Hold file is transferred, using SFTP, to the server, using the SFTP credentials in the *SSH/SFTP Settings* tab.

   The file that is uploaded needs to be associated with a Music on Hold number.
7. Go to the *3Com IP Messaging System* level from the explorer tree.
8. From the right-hand pane, click the *Music on Hold* tab.
9. From the *Music on Hold Number* field, set the Music on Hold number.

   The filename is set automatically when a file is uploaded. However, a user may change the filename if needed (the new filename must be that of a file that has been uploaded to the system).
10. Activate the Music on Hold file, by right-clicking on the *3Com IP Messaging System level.*
11. Click *Music on Hold* and then *Activate Music on Hold File*.

Upgrading the IP Messaging Software

EMS provides support for remote software upgrades of the IP Messaging software.

The software upgrade package is provided by 3Com or your authorized 3Com reseller and must be installed using the following sequence of steps.

1. The upgrade software (relevant tar file) MUST be located in the *<EMS_INSTALL_DIR>/software_upgrades/voice/IPMessagingUpgrades* directory on the EMS server.
2. Once the tar file is in the correct directory, from the EMS client explorer tree, click *3Com VCX IP Telephony Server*.
3. In the right-hand pane, click the *Planned Upgrades* tab.
4. Double-click the *Planned IP Messaging Upgrade* field.
5. Click *Save all* to commit the tar file to the database.

   Once an upgrade tar file has been selected, the tar file must be transferred to the IP Messaging server.
6. To transfer the tar file to the server, from the *3Com VCX IP Telephony Server* right-click menu, select *Transfer Upgrade Images* and then click *Transfer IPMSG Upgrade File*.

   These options are only available if a file has been selected for upgrade. The file is trasferred to the server using the SFTP credentials in the *SSH/SFTP Settings* tab. 3Com recommends not changing the SFTP username and password.

   Next the upgrade tar file needs to be installed, which is the last step before the new version becomes active.
7. To install the upgrade file on the IP Messaging server, from the *3Com VCX IP Telephony Server* right-click menu, click *Install Upgrade Images* and then click *Install IPMSG Upgrade*.
8. To verify the version number of the newly installed software, click the IP Messaging server from the explorer tree and then click the *Identification* tab.
9. Click *Refresh all* to confirm that the latest software has been installed.

Upgrading the SIP Phone Downloader and Boot File Software

EMS provides support for remote software upgrades of the 3Com phone software.

The software upgrade packages are provided by 3Com or your authorized 3Com reseller and must be installed using the following sequence of steps.

1. The software to be upgraded MUST be located in the following places on the EMS server. The relevant tar files from the release must be placed into the following EMS directories:
   - **Application Downloader software** – place the tar file in the *<EMS_INSTALL_DIR>/software_upgrades/voice/PhoneAppUpgrades* directory.
   - **Boot software** – place the tar file in the *<EMS_INSTALL_DIR>/software_upgrades/voice/PhoneBootUpgrades* directory.
2. Once the tar file is in the correct directory, from the EMS client explorer tree, click *3Com VCX IP Telephony Server*.
3. From the right-hand of the pane, click the *Planned Upgrades* tab.

   For each of these fields, the default setting is *None Planned*.
4. Double-click the correct field to choose the upgrade file.
   - **Application Downloader software** – double-click the *Planned Phone App Upgrade* field.
   - **Boot software** – double-click the *Planned Phone Boot Upgrade* field.
5. Click *Save all* to commit the filename to the database.

   Once an upgrade file has been selected, the file must be transferred to the server.
6. To transfer the file to the server, from the *3Com VCX IP Telephony Server* right-click menu, click *Transfer Upgrade Images* and then click one of the following depending on the type of upgrade being performed:
   - **Application Downloader software** – click *Transfer PhoneApp Upgrade File*.
   - **Boot software** – click *Transfer PhoneBoot Upgrade File*.

     These options are only available is a file has been selected for upgrade. The file is SFTP'd to the server, using the SFTP credentials in the

SSH/SFTP Settings tab. 3Com recommends not changing the SFTP username and password.

Now the upgrade file needs to be installed, which is the last step before the new version become active.

7 To install the upgrade file to the server, from the *3Com VCX IP Telephony Server* right-click menu, click *Install Upgrade Images* and then click one of the following depending on the type of upgrade being performed:

- **Application Downloader software** – click *Install Phone App Upgrade*.
- **Boot software** – click *Install Phone Boot Upgrade*.

  All of the upgrade is complete

8 To verify the version numbers of the newly installed software, click the each component from the explorer tree and click the *Identification* tab.

9 Click *Refresh all* to confirm that the latest software has been installed.

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